

Name: \_\_\_\_\_

**at1113exam: Expand, factor, and solve quadratics (v209)**

1. Solve the equation.

$$(7x + 6)(8x + 5) = 0$$

$$x = \frac{-6}{7} \quad x = \frac{-5}{8}$$

2. Expand the following expression into standard form.

$$(9x - 8)(9x + 8)$$

$$81x^2 + 72x - 72x - 64$$
$$81x^2 - 64$$

3. Expand the following expression into standard form.

$$(8x - 7)(5x + 9)$$

$$40x^2 + 72x - 35x - 63$$
$$40x^2 + 37x - 63$$

4. Expand the following expression into standard form.

$$(7x - 4)^2$$

$$49x^2 - 28x - 28x + 16$$
$$49x^2 - 56x + 16$$

5. Solve the equation with factoring by grouping.

$$18x^2 + 15x - 24x - 20 = 0$$

$$(3x - 4)(6x + 5) = 0$$

$$x = \frac{4}{3} \quad x = -\frac{5}{6}$$

6. Factor the expression.

$$x^2 - 16x + 63$$

$$(x - 9)(x - 7)$$

7. Factor the expression.

$$49x^2 - 81$$

$$(7x + 9)(7x - 9)$$

8. Solve the equation.

$$9x^2 - 19x - 15 = 4x^2 - 2x - 3$$

$$5x^2 - 17x - 12 = 0$$

$$(5x + 3)(x - 4) = 0$$

$$x = -\frac{3}{5} \quad x = 4$$